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ABSTRACT

A conceptual framework for the study of teachers' sense of efficacy was used to determine the extent to which teachers believed they could influence student learning. The framework was based on an extensive review of research literature on teaching, an ethnographic comparison of 2 organizationally different middle schools, and a process-product study of 48 high school basic skills teachers. Significant relationships among teacher efficacy, student-teacher interaction, and student achievement were found. Teachers with high efficacy attitudes tended to maintain high academic standards, concentrate on academic instruction, monitor students' on-task behavior, and develop a warm, supportive classroom environment, and their students had higher achievement test scores than did students of teachers with low efficacy attitudes. Current conditions in the school--isolation, uncertainty, powerlessness, and lack of economic rewards and social recognition--appeared to be factors that contribute to a low sense of efficacy in teachers. School organizational structures of teaming, multi-age grouping, and collegial decision-making among teachers appeared to be school factors that may increase teacher efficacy. Further research of teacher efficacy should be conducted within the contexts of teacher education, school organizational structure, beginning teacher socialization, and parent-teacher relations. (Author/CJ)

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A STUDY OF TEACHERS' SENSE OF EFFICACY

FINAL REPORT
EXECUTIVE SUMMARY

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Abstract

A conceptual framework for the study of teachers' sense of efficacy, that is, the extent to which teachers believe they can influence student learning, is described. The framework is based on an extensive review of the research literature on teaching, an ethnographic comparison of two organizationally different middle schools, and a process-product study of forty-eight high school basic skills teachers.

Significant relationships between teacher efficacy, student-teacher interaction, and student achievement are reported. Teachers with high efficacy attitudes tended to maintain high academic standards, concentrate on academic instruction, monitor students' on-task behavior, and develop a warm, supportive classroom environment, and their students had higher achievement test scores than students of teachers with low efficacy attitudes.

Current conditions in the school--the isolation, uncertainty, powerlessness, lack of economic rewards and social recognition--are identified as factors that contribute to a low sense of efficacy in teachers. School organizational structures of teaming, multi-age grouping and collegial decision-making among teachers are identified as school factors that may increase teacher efficacy.

Suggestions for further research of teacher efficacy within the contexts of teacher education, school organizational structure, beginning teacher socialization, and parent-teacher relations are discussed.

Preface

The Teacher Efficacy Study was initiated on the basis of two Rand Corporation evaluation studies that reported a significant relationship between teachers' sense of efficacy, that is, the extent to which teachers believe they can have a positive effect on student learning, and student achievement. The purposes of our teacher efficacy research were (1) to develop a conceptual framework for understanding the nature, antecedents, and consequences of efficacy attitudes in teachers, and (2) to suggest further research necessary to reject, elaborate, and/or extend the conceptual framework. More specifically, our objectives were to clarify the nature of the efficacy construct by investigating (1) factors that facilitate and inhibit development of a sense of efficacy in teachers, (2) teacher behaviors that are indicative of a sense of efficacy, (3) effects of teachers' sense of efficacy on students, other teachers, and other aspects of the school environment, and (4) methods of influencing the development of teachers' sense of efficacy. Major characteristics of the Teacher Efficacy Study included (1) a multidisciplinary approach, (2) a comparative field study of the effects of different organizational structures of schools on efficacy, (3) a process-product study of teacher efficacy, teacher and student behavior, and student achievement, and (4) the evaluation of a small-scale attempt to influence sense of efficacy.

The multidisciplinary approach to the study of efficacy was central to our study. In developing the preliminary conceptual framework, we examined the research literature in a number of related fields, including personality theory, industrial psychology, organizational sociology, sociology of occupations and schools, and educational anthropology. At various stages of the project, we also consulted an advisory group that included educational psychologists and sociologists, social psychologists, an anthropologist, a school organizational theorist, teacher effectiveness researchers, and classroom teachers.

A preliminary conceptual framework based on the literature review and advice of the advisory group was used to guide the design of the first phase of data collection in the spring of 1980. The basic procedures guiding this phase of data collection were derived from Glaser and Strauss's (1967) description of the discovery of grounded theory; specifically, the collection, coding, and analysis of data were carried out together to maximize the possibility of generating theory. During the preliminary data collection phase, 49 teachers at two organizationally different middle schools responded to a questionnaire that probed their feelings about teaching and the influences of the school organization upon their efficacy attitudes, and four teachers, two with high efficacy attitudes and two with low efficacy attitudes, were observed five times as they taught two of their classes and were interviewed regarding the frustrations and rewards of teaching.

The second phase of the Teacher Efficacy Study was based on the results of our middle school research and consisted of (1) a process-product study of 48 high school basic skills teachers, (2) interviews with the basic skills teachers in which we explored their efficacy attitudes, and (3) a pilot study comparison of three approaches to increase teacher efficacy. Findings from the two phases of data collection were used to refine the conceptual framework and to generate suggestions for further research.

The results of the Teacher Efficacy Study indicate that teachers differ in their efficacy attitudes, and these differences are reflected in teacher behaviors and students' performance. Our results also demonstrate that efficacy attitudes are elusive and changing. They are susceptible to many interactive influences, including personal, student, organizational, political, economic, collegial, and administrative influences. Future research efforts to improve teachers' sense of efficacy require an ecological perspective that takes into account the complex interactive relationships between teacher efficacy and the school environment. Four contexts that are particularly relevant for the design of research to enhance teacher efficacy include teacher education programs, beginning teacher socialization practices, school organization, and parent-teacher relations.

Our interviews with teachers revealed that feelings of efficacy are difficult to maintain in the current context of teaching. Uncertainty, isolation, and a sense of powerlessness threaten teachers' sense of professional self-esteem, and the lack of adequate economic rewards and societal recognition increase teachers' feeling of self-doubt. Future research should address these problems. We believe that teacher efficacy offers educators and researchers a powerful organizing construct for directing future research and educational improvement. We have found that teacher efficacy is of significant value in understanding teachers' definitions of their role, their attitudes toward their work, and their interactions with students. As a consequence, we believe that teacher efficacy shows promise as a useful indicator for guiding and evaluating school-wide innovations and classroom improvements, and most important, we believe that developing teachers' sense of efficacy is critical for attaining the goal of equal educational opportunity.

We would like to express our appreciation to the individuals whose valuable assistance enabled us to complete this project. Our consultants, Dan Lortie and Ray Rist, gave important guidance in the initial conceptualization of this study. We wish to express a special thanks to Richard deCharms who lit the spark sixteen years ago that motivated the obsession with the notion of personal efficacy that culminated in this study and who provided us with an invaluable model for judging our research 'efficacy.' We are indebted to Virginia Koehler, our Project Director at the National Institute of Education, for her support and encouragement, and to Michael Cohen, also of NIE, for his special insights into the ecology of teaching.

We are grateful to Mel Lucas and Gayle McLaurin of the Alachua County School District for providing us with the student achievement data and to Stephen Olejnik, Marilyn McAuliffe, Linda Crocker, and Dianne Buhr for their technical assistance in data analysis and for their ideas for measuring teacher efficacy.

We are especially grateful to Robert and Ruth Soar for their inestimable contribution to the study through their ever-patient training of our observers and their meticulous analysis of the process-product data. We wish to thank our observers, Patricia Birkett, Tess Bennett, Marty Peters, Barbara Rubin, and Pam Vetro, for their persistence in learning a complicated system of interaction analysis and meeting a rigorous schedule of observations.

We would like to acknowledge Tom Good and Douglas Grouws for sharing their workshop materials with us.

Robert Sherman, our department chairman, gave us the support without which this project would have been impossible.

Elise Webb helped code and interpret ethnographic data and took over many tasks, academic and domestic, that freed others to concentrate on this research. The present acknowledgment is no recompense but stands as an IOU taken in public.

We owe a special debt of gratitude to our student assistants, Zulal Balpinar, Linda DerHaag, and Wendy Elliott, for their patience and persistence in transcribing endless audiotapes, typing manuscripts, and for their courage in enduring the trauma of mastering the computer. Elsie Voss's contribution to our work on this and other projects is inestimable and deeply appreciated.

Finally and most importantly, we wish to thank the principals, teachers, and students who welcomed our intrusions into their busy lives and gave generously of their time and ideas to help us better understand the frustrations and rewards of teaching.

Major Findings

The purpose of the Teacher Efficacy Study was to conduct exploratory research in order to develop a conceptual framework on which further research could be based. In keeping with the exploratory nature of the study, the following findings must be considered tentative and in need of further research:

- Teachers' sense of efficacy was significantly related to students' achievement in high school basic skills classes.
- Teachers' sense of efficacy was related to maintenance of a warm, accepting classroom climate.
- Teachers' sense of efficacy was negatively related to teachers' use of harsh control tactics.
- Teachers' sense of efficacy was related to school organizational structures. Teachers in a middle school that had a team organization, teacher participation in school decision-making, and multi-age grouping of students had a higher sense of efficacy than teachers in a junior high with a departmental organization, traditional age grouping, and less teacher participation in decision-making.
- Teachers with high efficacy attitudes were more likely to maintain high academic standards, concentrate on academic instruction, monitor students' on-task behavior, and work to build friendly, non-threatening relationships with their low-achieving students than were teachers with low efficacy attitudes.
- Teachers with low efficacy attitudes tended to sort and stratify their classes according to ability and give preferential treatment (more instruction, more appropriate praise and feedback, more interaction, more assignments) to high ability students.
- Conditions in the schools--isolation, uncertainty, powerlessness, and the lack of economic rewards and social recognition--make it difficult for teachers to maintain high efficacy attitudes.

Introduction

Teachers' sense of efficacy refers to the extent to which teachers believe that they have the capacity to affect student performance. The construct of teacher efficacy was introduced into educational research in two Rand Corporation evaluation studies (Armor, Conry-Osequera, Cox, Kin, McDonnel , Pascal, Pauly & Zellman, 1976; Berman, McLaughlin, Bass, Pauly & Zellman, 1977) that reported a significant relationship between teacher efficacy and student achievement. In both Rand studies, teachers' sense of efficacy was measured by the total score obtained from two Likert scale items:

1. When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment.

   1) Strongly agree 2) Agree 3) Neither agree nor disagree 4) Disagree 5) Strongly disagree

2. If I really try hard, I can get through to even the most difficult or unmotivated students.

   1) Strongly agree 2) Agree 3) Neither agree nor disagree 4) Disagree 5) Strongly disagree

(Berman et al., 1977, pp. 159-160)

The Teacher Efficacy Study was initiated to investigate further the possibility that teachers' sense of efficacy has a significant influence on student achievement. Specifically, the purpose of the efficacy research was to develop a conceptual framework for understanding the nature, antecedents, and consequences of efficacy attitudes in teachers and to suggest further research necessary to reject, elaborate, and/or extend the conceptual framework.

The Construct of Teacher Efficacy

The conception of teacher efficacy that guided our research was based on a modification of Albert Bandura's (1977) social learning mechanism of self-efficacy. According to Bandura, an individual's sense of efficacy operates as a cognitive mediator of behavior. That is, psychological experiences create expectations of personal efficacy -- convictions that behaviors can be successfully performed or, conversely, expectations of personal incompetence. Then future motivation and learning are mediated by the individual's expectations of personal efficacy. Thus, contrary to behavioristic assumptions, behavior is not controlled by its immediate consequences but rather by the expectations created that the behavior will have an expected effect. In Bandura's terms, self-efficacy is not a global construct similar to popular notions of self-concept; it is rather a cognitive mechanism for processing efficacy information, referring to a dynamic, multi-dimensional process resulting in situation-specific efficacy expectations.

Our conception of teachers' sense of efficacy, represented in Figure 1, consists of a hierarchically organized, multi-dimensional model. The dimension located on the left of the model labeled teaching efficacy refers to teachers' beliefs about the general relationship between teaching and learning. For a specific example of how teachers might come to differ on this dimension, consider the following: A teacher who is convinced by Arthur Jensen's (1981) analysis of ability in students will tend to have a low sense of teaching efficacy, while a teacher convinced of Benjamin Bloom's (1978) position on student learning ability will have a high sense of teaching efficacy. These expectation differences will be reflected in teachers' specific expectations for specific students in specific situations. On the opposite side of the model is personal efficacy, the teacher's general sense of effectiveness as a teacher. Finally, the most specific level of conceptualization, and, consequently, the best predictor of teacher behavior is the teachers' sense of personal teaching efficacy, representing an integration of personal efficacy and teaching efficacy. It is important to keep these dimensions separate conceptually because it is likely that the most appropriate teacher change strategy will depend on the origin of the sense of inefficacy. A teacher convinced of her own ability to teach but doubtful of her students' ability to learn would require a different intervention than a teacher who is convinced of her students' ability to learn but doubtful of her own competence as a teacher. In simple terms, personal teaching efficacy is reflected in the teacher statement, "I can't motivate these kids"; however, the statement may be attributable to the teacher's sense of teaching inefficacy, that is, the belief that "these kids can't be motivated," or the teacher's sense of personal inefficacy, that is, the belief that "I personally can't motivate."

Developmental and social-psychological research and theory (Bandura, 1977) indicate that through personal life experiences, individuals develop a generalized expectancy between action and outcome; in addition, through their individual life experiences teachers have developed personal expectations regarding their own ability to influence outcomes. This is equivalent to deCharms's (1968; 1976) sense of personal causation or Bandura's generalized sense of self-efficacy. When specific experience in a given situation is lacking, the teachers' generalized sense of self-efficacy will be a major determinant of behavior. However, with training and experience, teachers develop specific beliefs about the ability of teachers, in general, to motivate different types of students in different types of situations and their own personal ability to motivate students in specific situations. In sum, teachers' sense of efficacy represents their implicit personal theory of student motivation.

As conceived by Bandura and applied in our model, sense of efficacy is a critical construct in understanding motivation, because it influences the nature and extent of behavior, the amount of effort expended and degree of persistence maintained in the face of difficulty. Seligman's learned helplessness theory (Abramson, Seligman & Teasdale, 1978) is helpful in explaining the impact of the various dimensions of teachers' sense of efficacy on teacher behavior (see Figure 2). A low sense of efficacy may be due to the teacher's belief that certain low achieving students, by virtue of their home environment, cannot be

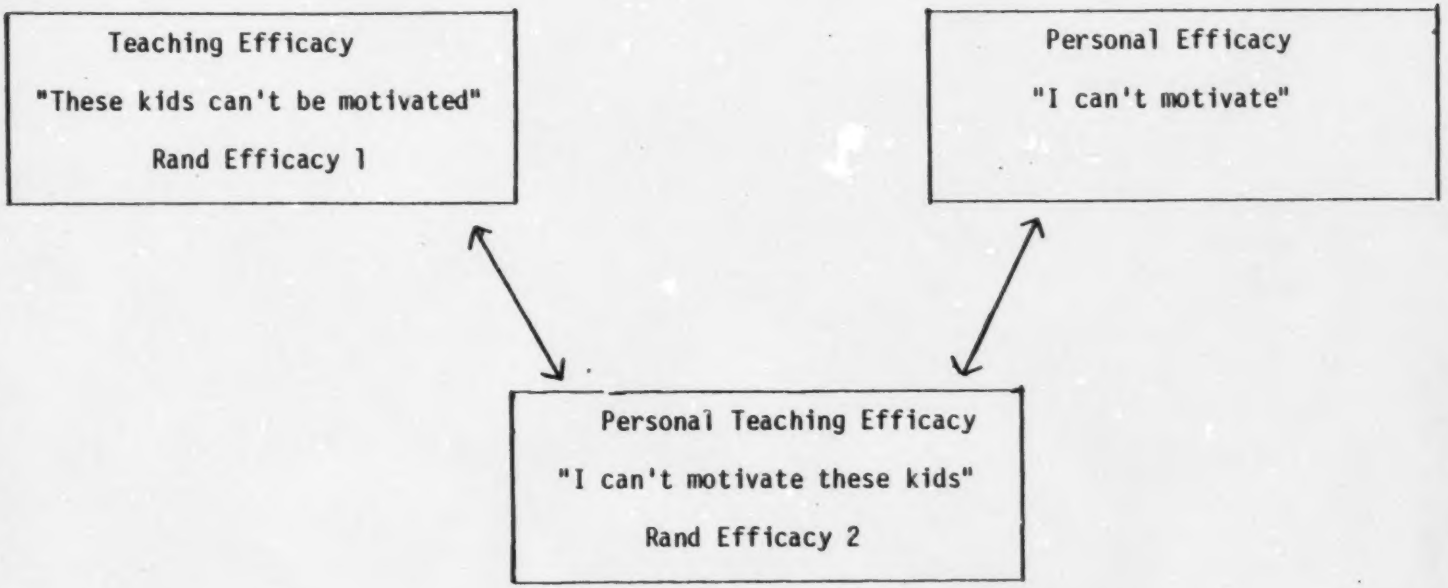

Figure 1. Teachers' Sense of Efficacy:
The Measurement Model

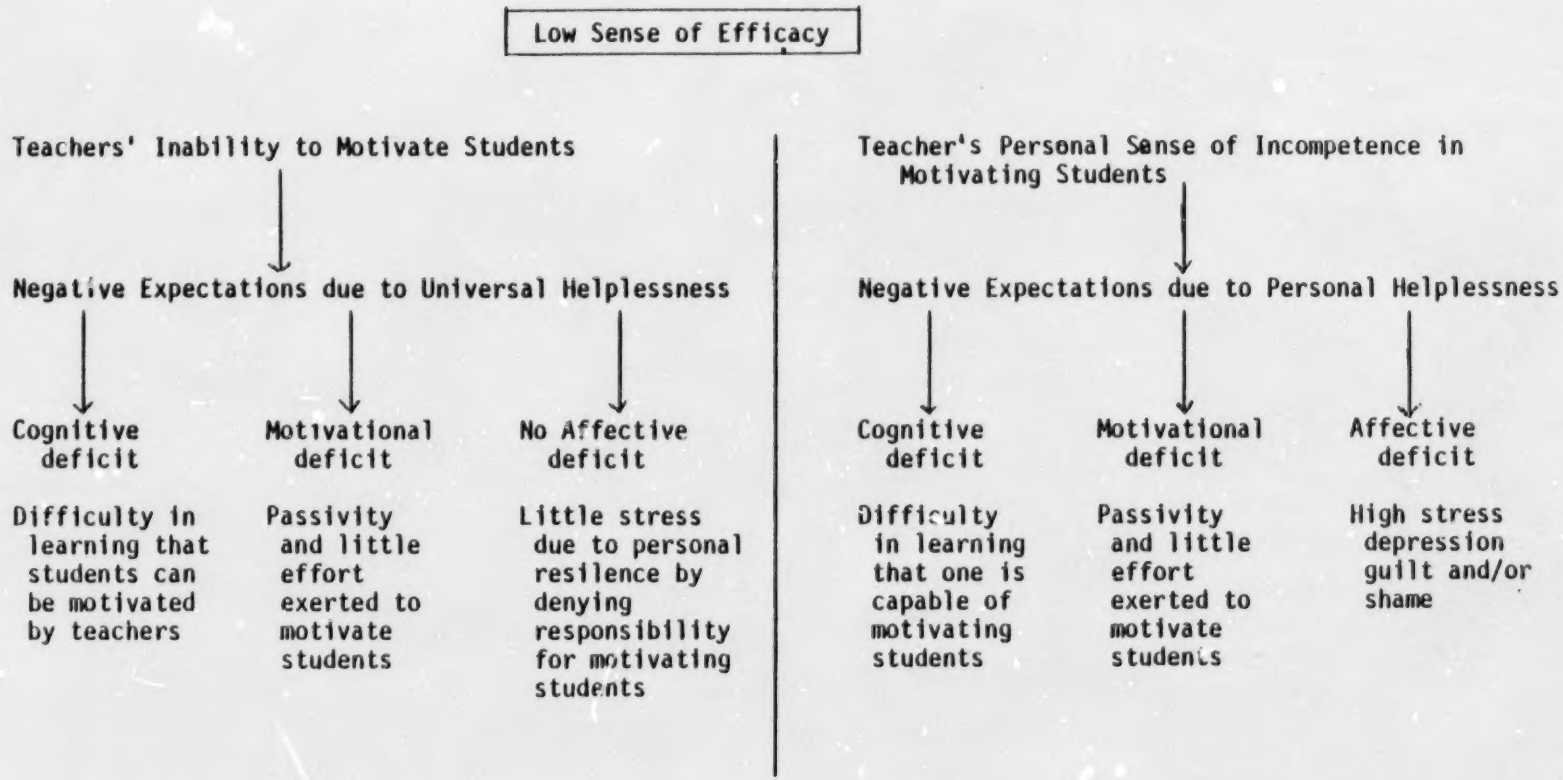
Low Sense of Efficacy
Teachers' Inability to Motivate Students
Negative Expectations due to Universal Helplessness
Cognitive deficit
Difficulty in learning that students can be motivated by teachers
Motivational deficit
Passivity and little effort exerted to motivate students
No Affective deficit
Little stress due to personal resilence by denying responsibility for motivating students
Teacher's Personal Sense of Incompetence in Motivating Students
Negative Expectations due to Personal Helplessness
Cognitive deficit
Difficulty in learning that one is capable of motivating students
Motivational deficit
Passivity and little effort exerted to motivate students
Affective deficit
High stress depression guilt and/or shame

Figure 2

Comparison of Motivational, Cognitive and Affective Outcomes of Low Sense of Efficacy Attributable to Belief in Teachers' Inability to Motivate Students and Teachers' Personal Sense of Incompetence in Motivating Students

motivated by their teachers. This would be a case of universal helplessness in Seligman's terms; that is, no teacher would be capable of motivating this group of students. Consequently, teachers with a sense of universal helplessness would exert less effort in motivating difficult students, because they would see all effort as inherently futile (a motivational deficit), would be resistant to learning from experiences with low achieving students that contradict their basic belief about the students' uneducability (a cognitive deficit) but would maintain their self-esteem, because they would feel no responsibility for being unable to do what no one else could do (no affective deficit). In contrast, the teacher who has a personal sense of helplessness or inefficacy, that is, the teacher who believes that low achieving students can be motivated to achieve, given an effective teacher, yet feels personally ineffectual with these students, will experience the motivational and cognitive deficits characteristic of the teacher who believes that all teachers are unable to do much to motivate students, but, in addition, will experience a loss of professional self-esteem, an affective deficit that is likely to be accompanied by high feelings of stress and may result in hostile, negative interactions with resistant students. An example of this type of inefficacy is provided by the following quote from a teacher who was deeply troubled by her failure to reach her students:

> Well, I still feel I have the capacity for it. But in some instances I'm not so sure that I care. But other times I care a great deal. Sometimes I feel, what's the use. Teaching can be very frustrating, a very frustrating experience. I'm not going to mince words about it, that's the way I feel. I feel threatened too. I can see where a lot of those classes could be very threatening.

The low efficacy teacher with a sense of universal helplessness will experience little stress and may be able to maintain enthusiasm through the personal resilience gained by having low expectations of being able to influence student performance. Consider, for example, the following quote from a low efficacy teacher whose belief in the uneducability of some students enabled her to maintain her personal sense of competence and, thus, remain untroubled by her inability to reach these students:

> I don't want to teach grammar, and I told the principal that. In fact, I told him not to assign me to a language arts class again. We argued about it. I said I'm not interested in teaching grammar to illiterates. He said that was because I don't like teaching grammar. But I said, wrong. I love grammar. I'm a whiz at grammar. It's the easiest thing in the world to teach. But these students can't get it, and I don't agree with teaching it to them. . .

Given the distinctive differences between a low sense of efficacy attributable to belief in teachers' inability to motivate students in contrast to a belief in one's personal inability to motivate students, efforts to influence teachers' sense of efficacy must be based on an analysis of the origin of the inefficacy: If it is attributable to the teachers' feelings of personal incompetence a different strategy would be required than in the case in which the sense of inefficacy is attributable to ideological beliefs about the educability of various student types.

On the basis of our assumptions about the nature of teachers' sense of efficacy derived from Bandura's model and its hypothesized importance in teacher-student interaction and student achievement, we designed the first phase of data collection to further our understanding of the dynamics underlying the development and maintenance of teachers' sense of efficacy.

The Middle School Teacher Efficacy Study

The purpose of the middle school phase of the Teacher Efficacy Study was to begin to elaborate the conceptual framework for future study of teachers' sense of efficacy. Three major objectives guided this initial phase of our efficacy research:

(1) to ground our conceptual framework for understanding teacher efficacy in empirical data by using the procedures outlined by Glaser and Strauss (1967) for the discovery of grounded theory;

(2) to investigate teachers' subjective perceptions of their teaching effectiveness and the factors that facilitate and inhibit their sense of efficacy and to search for relationships between teacher efficacy and a variety of school and teacher characteristics believed to be related to teacher efficacy through questionnaires;

(3) to explore the school organizational factors contributing to teachers' sense of efficacy through a microethnographic study of teacher attitudes in two organizationally different middle schools.

For each of the three objectives, a different methodology was utilized. The use of the three different approaches (a type of triangulation) was selected in an effort to increase the validity of our conclusions by seeking convergent results emerging across the three methodologies (Denzin, 1970).

Since a major objective of this phase of our study was to develop an understanding of how school organization influences characteristic patterns of teacher thought and behavior related to their sense of efficacy, two middle schools with major organizational differences were selected for study: a school having a modern middle school organization and a school having a traditional junior high organization. Specifically, the two schools differed on the following dimensions:

1. Interdisciplinary team versus department organization. In the middle school, teachers and students were assigned to a team with four or more teachers, representing different subject areas, serving a common group of 120-170 students. Teachers and students on a team had neighboring classrooms and shared the same part of the school plant and a similar daily schedule. Teachers frequently planned their instruction on a common theme for which there was interdisciplinary planning. In addition, there was team decision-making regarding the students they shared and their curriculum needs. In the junior high, teachers in the same department met periodically for curriculum planning. Classrooms were located in proximity by department; for example, all sixth grade history teachers in the same wing, so that teachers who taught the same students were rarely in close proximity.

2. Multi-age versus single-age grouping: In the middle school, students remained with the same team of four teachers for three years and were assigned to one of these four teachers as their homeroom teacher and adviser for the duration of three years. All classes for the three years were taken with the same teachers. Thus, in each class there were students at three grade levels equivalent to grades six, seven, and eight. In a mathematics class, for example, of twenty-four students, eight would be in their first year of middle school, eight would be in their second year, and eight in their third year. In the junior high, students were grouped by chronological age and the number of years in the school.

3. Adviser-Advisee Program versus homeroom: In the middle school, multi-age groups of about twenty-four students were assigned a Teacher-Adviser with whom they met daily for a twenty-five minute period. In the junior high, the first five minutes of every first period class was called homeroom and was used for an attendance check.

Research Participants and Procedures

The two schools consisted of approximately 1000 students in grades six through eight and were located in a small (100,000 population) southeastern university town. The student populations of the two schools were comparable in socio-economic and racial distribution.

Teachers at the two schools were asked to spend two hours completing a questionnaire designed to investigate their perceptions of teaching. They were paid $10 each for their contribution to the study. Approximately half of the teachers at each school completed the questionnaire, twenty-nine middle school teachers and twenty junior high teachers. The sample consisted of 35 white female, 5 white male, 7 black female, and 2 black male teachers. Their ages ranged from the early twenties to late fifties, with the majority between the ages of 25 and 35. Since the return rate of the questionnaire was similar at the two schools, it was asssumed that the samples were probably equivalent; however, generalizations are limited in that teacher participation was voluntary.

From the teachers' scores on the two Rand efficacy items, four teachers, two scoring high on efficacy and two scoring low on efficacy, at each school were identified for further study. The participating teachers included one high efficacy and one low efficacy social studies teacher and one high efficacy language arts and one low efficacy language arts teacher at eacn of the two schools. The teachers were limited to those two subject matter areas to reduce the influence of subject matter differences. The teachers were observed teaching two of their classes four to five times over a six weeks period. Teachers were paid $25 for their participation. After the observations were completed, the observers completed an interview with their teachers. The data from the observations and interviews were analyzed using the techniques outlined by Glaser and Strauss (1967) for the discovery of grounded theory.

To further investigate the influences of organizational structure on teachers' sense of efficacy, a year-long micro-ethnographic comparison of two teachers at each of the two middle schools was conducted. Data consisted of classroom observations and teacher interviews. The primary methodological strategy employed was cultural theme analysis (Spradley, 1980), a process of identifying domains which appear to have an organizing capacity, providing a system of meaning for individuals within a cultural setting.

Major Findings

Questionnaire Study

Teachers differed in their focus when evaluating their personal effectiveness. The majority focused on teaching subject matter but about a third focused on working effectively with students with special problems.

There were school differences in the way teachers evaluated their personal effectiveness. Teachers at the junior high were more likely than the middle school teachers to define their effectiveness in terms of dealing with student problems rather than in teaching their academic subject.

Teachers tended to attribute teaching effectiveness to their own personal characteristics and failures in teaching to environmental conditions, such as administrators, lack of materials, large classes, and unmotivated students.

There were school differences in the teachers' role perceptions. Teachers at the middle school were much more likely to refer to affective concerns--"establishing a personal relationship," "listening," "helping students emotionally," "caring," "acting as a role model"--in describing their work than the junior high teachers who focused predominantly on the role of "instructor of subject matter."

Teachers at the middle school considered teaching to be more important to them than the junior high teachers, were more likely to report that they would choose teaching again as a career if they had a chance to do so, and were more satisfied with teaching than the junior high teachers.

Middle school teachers reported more difficulties with collegial relations than the junior high teachers.

The Grounded Theory

The major social-psychological problem facing teachers is the maintenance of a sense of efficacy in a profession that offers few supports for and myriad threats to the self-respect of its members.

Teaching is threatening to teachers' sense of efficacy because:

1. It is difficult for individual teachers to assess whether or not they are making a lasting or significant difference in the lives of their students.

2. Teachers do not share a technical culture against which individuals can assess the efficacy of their behavior or the extent of their professional competence.

3. Teachers are isolated from one another.

4. Teachers must live with the knowledge that their performance is being monitored by colleagues and that their peers' opinions regarding their professional competence will be based on incomplete, often second-hand knowledge.

5. The ideology of non-interference that governs the interpersonal relations among teachers makes it difficult for individuals to gather help or support from colleagues.

6. The profession receives little public recognition, social status, renumeration, or professional autonomy and thus engenders status anxiety in teachers who entered the profession expecting to enjoy all the perquisites of white-collar, solidly middle-class work.

7. Many teachers feel that they receive little support from administrators and are treated "unprofessionally" by those above them in the school system.

8. Many teachers have little say in the decisions that affect their work.

9. Teachers are barraged with criticisms of public schooling from the media, the public, and sometimes the parents of their students.

10. Many teachers suffer self-estrangement.

Low-efficacy teachers were likely to perceive students, especially low-achieving students, as threatening to their definition of the classroom situation and to the order of the class. High-efficacy teachers were not as likely as their low-efficacy colleagues to appear angered or threatened by the misbehavior of students.

Low-efficacy teachers were likely to define student behavior in terms of potential disruption. High-efficacy teachers defined student behavior in less threatening terms and were less likely to react to students with negative emotion.

Teachers used a "mini-max" strategy in choosing instructional approaches; that is, they chose those instructional strategies that offer them the most evidence of success and the least evidence of failure.

Low-efficacy teachers tended to concentrate their efforts, concerns, and affection on high-achieving students.

Low-efficacy teachers tended to sort and stratify their classes according to ability and give preferential treatment (more instructions, more interaction, more appropriate praise and feedback, more assignments) to high ability students.

High-efficacy teachers had clear expectations for the beginning and endings of class sessions and routine procedures for enforcing those expectations.

High-efficacy teachers demonstrated "withitness." They seldom overlooked infractions when they occurred and took action, both subtly and overtly, to curb inappropriate student behavior.

High-efficacy teachers were more likely to keep students on task and to stay on task themselves.

High-efficacy teachers tended to handle the threats that students posed to their sense of efficacy by building personal relationships with their pupils in order to facilitate learning.

The Middle School Ethnography

Teachers' conceptions of teaching differed in the two schools. The teachers at the middle school described teaching as an "exalted" profession, a great moral responsibility. They felt they had an opportunity to affect the lives and futures of their students in significant ways. The teachers at the junior high were more prosaic in their descriptions. While they liked teaching, they did not talk of it in glowing terms but described it more as a burdened profession, a trying job, and they were doubtful about the possibility of having a significant impact on their students' lives.

The three organizational characteristics of the middle school--the team organization, the multi-age grouping, and the adviser-advisee relationship of teacher and student--contributed to the maintenance of a sense of efficacy among the middle school teachers. The isolation and lack of collegial support in the junior high were related to the lower efficacy attitudes in the junior high.

The High School Basic Skills Study

The purposes of the high school basic skills phase of the Teacher Efficacy Study were (1) to investigate further the relationship between teacher efficacy, teacher and student behavior, and student achievement, using systematic observation of classroom interaction; (2) to explore in greater detail the efficacy attitudes of teachers revealed in our interviews with the middle school teachers by conducting interviews with a larger sample of high school basic skills teachers, and (3) to compare the effectiveness of three approaches designed to increase teacher efficacy.

Basic skills mathematics and communications teachers were selected for study, because we expected that of all teaching situations we could choose to study, teachers' sense of efficacy would be most likely to have an impact on teacher behavior in these classrooms. Students were placed in basic skills classes because of low scores (below the thirtieth percentile) on the annual Metropolitan Achievement Test. Students were selected for special remediation because they had failed or were expected to fail the state competency test administered to all eleventh graders in the state. Doubting their ability to teach students with problems, teachers with a low sense of efficacy faced with an entire class of students having a history of school failure would be likely to demonstrate their sense of inadequacy in their interactions with the class. Thus, to maximize the likelihood of observing behavioral correlates of teachers' sense of efficacy, we conducted our observational study in high school basic skills classes.

Research Participants

Forty-eight basic skills teachers (mathematics and communications teachers in four high schools in a southeastern university community)

participated in the study. The sample consisted of 28 white female, 16 white male, 1 black male, and 3 black female teachers. The teachers had an average of 10 years experience, with the range of experience extending from 1 to 35 years, with the median being 8 years of experience. One basic skills class of each teacher was observed at least twice, and most were observed three times during a two-month period in the winter of 1980-81. Since the curriculum of the classes was similar across grades, to the extent that in several classes students of different grade levels were combined, observations were conducted in ninth, tenth, and eleventh grade classes. Major portions of the data were available for 45 teachers, although that number varied somewhat from analysis to analysis, due to missing data.

Process-Product Measures

Student achievement. Student achievement was measured by the Mathematics, Language, and Reading subtests of the Metropolitan Achievement Test administered in the spring of 1980 and 1981.

Teacher attitudes. The teachers completed a questionnaire that included the two Rand efficacy questions, two additional efficacy scales, two items assessing teacher stress, and a question regarding the degree of responsibility the teacher assumed for student learning.

Classroom observation measures. Three instruments were used to code classroom interaction. The Climate and Control System (CCS) (Soar & Soar, 1981) was used to obtain a record of the environment for learning. The CCS provides a measure of the classroom organization, the teacher's control strategies, the pupils' response to the teacher's control, and, in turn, the teacher's response to pupils' reactions to their control strategies. In addition, climate is measured in terms of the expression of both positive and negative affect of teachers and pupils. The Teacher Practices Observation Record (TPOR) designed by Brown (1968) was used to analyze the instructional methods employed by the teacher in the classroom. The types of observations included in the TPOR are the nature of the classroom situation, the nature of the problems the teacher presents to students, the processes the teacher uses in developing student ideas, the teacher's use of subject matter, the teacher's evaluation and motivation strategies, and the extent to which the teacher differentiates instruction and evaluation to meet individual student needs. The Research for Better Schools (RBS) Engagement Rate Form (Huitt & Rim, 1980) was used to estimate student time-on-task in the basic skills classrooms.

Major Findings

Teachers' belief in the educability of students (Rand Efficacy 1) was significantly related to their students' achievement on the mathematics subtest of the Metropolitan Achievement Test with students' entering ability controlled by holding constant the students' scores on the Metropolitan test from the previous year.

Teachers' sense of personal efficacy (Rand Efficacy 2) was significantly related to their students' language achievement as

measured by the language subtest of the Metropolitan Achievement Test with students' entering ability controlled by holding constant the students' scores on the Metropolitan test from the previous year.

Several trends (significance levels greater than .05 but equal to or less than .10) were indicated between teacher efficacy and teacher behavior:

Teachers' belief in students' educability (Rand Efficacy 1) was negatively related to teachers' use of strong control tactics and positively related to a supportive, interactive style that permitted open communication with students and involvement of students in classroom decision-making.

Teachers' belief in their personal teaching efficacy (Rand Efficacy 2) was positively related to teachers' maintenance of a secure, accepting classroom climate, supportive of student initiative and concerned with meeting the needs of all students.

The Interview Study

Observational and interview data obtained from the middle school teachers suggested that efficacy attitudes were related to how teachers define and adjust to their professional roles. Some teachers defined their professional competency in terms of their ability to reach and teach all students, including the "slowest kids in the class." Others believed themselves to be excellent teachers even though they ignored many students who were learning little or nothing in their classes. In order to better understand the relationship between efficacy and the role expectations of teachers we undertook a role analysis of interviews of the middle and high school teachers.

Research Participants and Procedures

Twenty-three high school teachers and ten middle and junior high school teachers were interviewed. The high school teachers were solicited from the basic skills teachers who participated in the process-product phase of the study. They came from three schools, two of which served a small city population and one was located in a rural community. The middle and junior high teachers had participated in the observational phase of the middle school study described earlier in this report. All schools were integrated and served populations of poverty students ranging from a low of 15 percent of the student body to a high of 49 percent. Typically interviews took place in the teacher's classroom, after school or during a free period, and lasted for approximately 50 minutes. Interview data were analyzed using methods detailed in Spradley's (1980) The Ethnographic Interview. Particular attention was paid to data that bore on the question of the teacher's professional role, peer relationships, presentations of self, and perceptions of teachers' relationships with poverty students.

Major Findings

Teachers' efficacy attitudes often differ depending on the students with whom they work.

High-efficacy teachers held relatively high academic standards for their low-achieving students in comparison to their low-efficacy colleagues.

High-efficacy teachers concentrated on academics in their classes and insisted that their students remain on task. Low-efficacy teachers were less likely to monitor the on-task behavior of their low-achieving students.

High-efficacy teachers held positive attitudes toward their low-achieving students and worked to build friendly non-threatening relationships with them. Low-efficacy teachers had negative attitudes toward their low-achieving students and were more likely to use negative means of controlling them than their high-efficacy counterparts.

The conditions of the schools--the pressures of isolation, uncertainty, powerlessness, and the lack of economic rewards and social recognition--make it difficult for teachers to maintain high-efficacy attitudes.

The Teacher Change Study

Researchers have often been admonished that "if you want to understand something, try to change it" (Bronfenbrenner, 1976, p. 6). On the basis of the assumption that an effort to increase teacher efficacy would illuminate important relationships and factors that influence efficacy, we conducted a small-scale pilot effort to increase teachers' sense of efficacy.

In recent years, a number of advocates of the process-product approach to teacher effectiveness have found that teacher behaviors can be changed by workshops and training materials that demonstrate the teaching behaviors associated with increased student achievement (Anderson, Evertson, & Brophy, 1979; Good & Grouws, 1979; Stallings, Needels, & Stayrook, 1979). In contrast, other researchers (Cohen, Emrich, & deCharms, 1976/77; Fenstermacher, 1978) have insisted that direct efforts to change behaviors are not likely to have long-term effectiveness if the basic attitudes that maintain the behaviors are not developed. The issue of whether to focus on change of specific teacher behaviors or to attempt to influence teacher attitude change directly has not been adequately resolved in the research literature, although recent studies of cognitive behavior modification (Meichenbaum, 1977) and attribution retraining (Fowler & Peterson, 1981; Schunk, 1981) suggest that a combination of attitude and behavior change is likely to be more effective than either attitude or behavior change alone.

To provide some evidence on the question of effective behavior change, three approaches to change of teacher behavior were compared:

(1) a process-product approach to teacher change, based on materials developed by Grouws and Good (1979);

(2) an attitude change approach, based on McClelland (1978) and deCharms's motivation change projects, and

(3) an integrated, process-product, attitude change approach, combining the materials from workshops 1 and 2.

Research Participants and Procedures

The sample consisted of the forty-eight teachers of basic skills mathematics and communication from the four high schools that participated in the process-product study. In light of the problems encountered in introducing more than one treatment in a single school, three high schools, similar in size and racial and social class distributions were selected, and a different treament, consisting of a two-hour workshop based on the programs outlined above, were presented to the basic skills teachers in each of the three schools; the basic skills teachers at the fourth school were included for observation as a control group receiving no training or materials. To assess the effectiveness of the workshops and materials, teachers were observed on at least two occasions approximately six weeks after the workshops. The criterion measure was the rating of student attention to task obtained from the Classroom Climate and Control Observation System (Soar & Soar, 1981).

Major Findings

No significant differences among the four groups of basic skills teachers in their students' attention to task were obtained as a result of participation in the teacher change workshops.

Analysis of teachers' informal reactions to the workshops and materials indicated that an effective change effort would require a school climate of commitment to change and school-wide support of teachers' efforts to change.

The Conceptual Framework for Future Study of Teacher Efficacy

The conceptual framework described in the following pages was developed from a review of the research literature on teaching and social-psychological behavior and the research results from our middle school and high school basic skills studies.

The critical role of teachers' sense of efficacy in student achievement is represented in Figure 3. The relationships obtained in our studies are indicated by solid black arrows; broken arrows indicate relationships that are postulated in our theoretical framework but were not tested in our work.

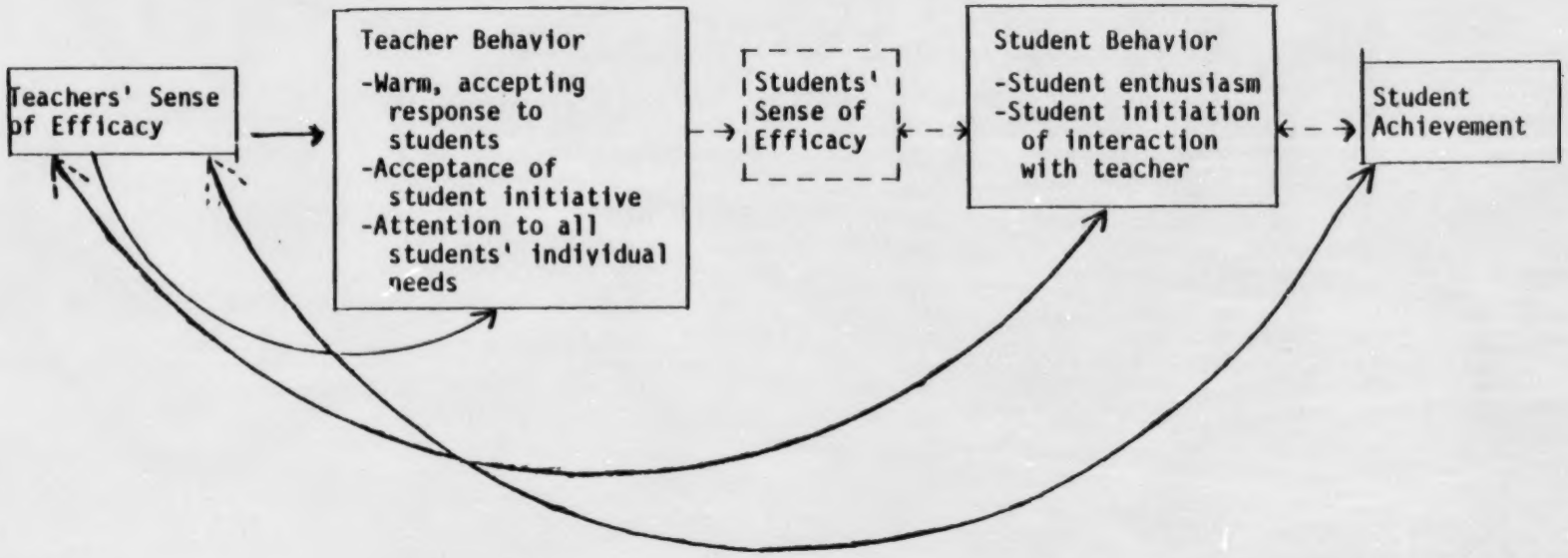

Figure 3

Teachers' Sense of Efficacy: The Critical Construct
in a Motivational Model of Teacher Behavior and Student Achievement

In brief, we found that teachers' sense of efficacy was significantly related to student achievement, as measured by Metropolitan Achievement Test scores, with students' entering ability controlled by holding constant the students' scores on the Metropolitan test from the previous year. In addition, teachers' sense of efficacy was related to teacher and student behaviors that suggest that teachers with a high sense of efficacy are more likely to be attentive to the individual needs of all students and to respond to students in a positive, accepting, supportive style that encourages student enthusiasm and involvement in decision-making.

Our research suggests that teachers' sense of efficacy is reciprocally and multiply determined by a complex and interrelated system of variables. An adequate understanding of the dynamics affecting teachers' sense of efficacy requires a perspective that reflects the complexity of the relationships existing among these variables. Traditional research approaches that assume a linear, additive model and conceive of effects in terms of antecedents and consequences are inadequate for the task of discovering the complexity of the relationships existing in regard to teachers' sense of efficacy.

The ecological approach to educational research proposed by Bronfenbrenner (1976) with its assumptions of system effects provides an analytical structure that is particularly compatible with our basic assumptions regarding teachers' sense of efficacy. The ecological approach requires the consideration of reciprocal relations among variables; for example, as indicated in Figure 3, teachers' sense of efficacy affects and is affected by student achievement. Consequently, the typical unidirectional analyses of traditional educational research studies will be inadequate for a thorough description of teachers' sense of efficacy. Analyses that permit study of interdependencies among variables must be designed.

An ecological perspective demands that "indirect" effects be included in an explanatory model. For example, parent influences are certain to be impinging on the teacher-student relation as are school climate influences, such as administrator and physical plant effects. These indirect environmental effects outside the school setting must be considered in order to obtain an adequate description of teachers' sense of efficacy. The teachers' family relations, social support networks, and community involvement activites are also likely to affect their personal sense of efficacy. Interdependencies between school and experiences in other settings must be included to represent adequately the factors affecting teachers' sense of efficacy. Bronfenbrenner's nested arrangement of interrelated systems is useful for structuring a contextual analysis of teachers' sense of efficacy:

(1) The microsystem consists of the teachers' immediate setting, typically the classroom or school;

(2) The mesosystem is comprised of the interrelations among the teachers' major settings:

(3) The exosystem refers to the formal and informal social structures that influence the teachers' immeidate setting, including the socio-economic level of the community, the nature of the school district, the mass media, the state and national legislative agencies.

(4) The macrosystem consists of the predominant cultural beliefs and ideologies that have an impact on teacher thought and behavior or on the various other systems impinging on teachers.

Consideration of our research findings in terms of Bronfenbrenner's ecological structure reveals a number of factors that have an important effect on teachers' sense of efficacy. These findings will be discussed in terms of each of Bronfenbrenner's systems, and research literature supporting the importance of these factors for teachers' sense of efficacy will also be noted.

The Microsystem

According to teachers' subjective perceptions, various aspects of their classroom have significant impact on their sense of efficacy. Our conception of sense of efficacy as a situation-specific dynamic is derived in part from our interviews with teachers in which they attributed changes in their sense of efficacy to the following classroom attributes.

Student type. According to teachers' self-report, student type appears to be the most significant class-level variable affecting their sense of efficacy. Brophy and Evertson (1981) documented many of the student attributes that influence teachers' expectations and their consequent interactions with students. For most teachers, students' ability (Prawat & Jarvis, 1981) appears to be the single most significant student characteristic affecting teachers' sense of efficacy.

Heterogeneous grouping of students may reduce the impact of student type on teachers' sense of efficacy. In a comparison of teachers who taught heterogeneously grouped classes with teachers who taught basic skills classes, we found that the teachers of basic skills classes reported a lower sense of personal efficacy.

Class size. Teachers are nearly unanimous in citing class size as an important factor in their ability to be effective motivators, and size becomes an even more salient feature for basic skills teachers, because they report that individual attention is much more important for the motivation of low achieving students than for average and above average students. A recent meta-analysis (Glass & Smith, 1979) provides validation of this long-held assumption of teachers, that until now was considered only a subjective perception of teachers. However, the Glass and Smith study indicated that important achievement gains are detectable only when class size is reduced to 15 and below.

Role definitions. Teachers' role definitions are likely to influence their sense of efficacy. For example, enthusiastic teachers who define their role primarily in terms of socialization aims and expect academic gains to be small tend not to be overly troubled by students' failure to make rapid achievement gains and do not experience a decline in professional self-esteem when confronted with basic skills students. In contrast, teachers who define their role in terms of academic achievement goals are likely to be beset with self-doubt as a result of their inability to motivate students and, as a consequence, may attribute their students' difficulties to their laziness or moral unacceptability in an attempt to protect their sense of professional self-esteem.

Activity structure. Teachers' sense of efficacy is likely to vary with the activity or task. Some teachers perceive themselves to be more effective in large group than small group instruction, for example. Such personal assessments will influence the teacher's choice of future activities, and as a continually expanding literature indicates, choice of activity structure has extremely important implications for student achievement and social development (Bossert, 1979; Carew & Lightfoot, 1979; Cohen, 1979; Johnson & Johnson, 1974; McDermott, 1977; Rosenholtz & Wilson, 1980).

Mesosystem

Recent research on effective schools (Brookover, Beady, Flood, Schweitzer & Wisenbaker, 1979; Cohen, 1980; Rutter, Maughan, Mortimore & Ouston, 1979) has emphasized the importance of within school relationships affecting teachers' sense of efficacy. Our study of teachers from two organizationally different middle schools dramatized the difference that school-level factors can have on teachers' sense of efficacy. Important differences between the two schools were found on the following mesosystem variables:

School norms. Teachers at the two schools varied significantly in their role perceptions and expectations for students. Teachers at the modern middle school defined their role more often in terms of meeting the affective, socialization needs of their students and, perhaps in part because of their experience with multi-age grouping, were less concerned with ability differences among their students. Their expectations for their students' achievement and improvability were significantly higher than the junior high teachers who had a more fatalistic attitude toward their students' performance.

While our findings are based on correlational data and may only be indicative of initial differences in teachers, they are supportive of other research indicating that school norms can be influential in determining teacher attitudes and behavior. For example, Leacock (1969) described the process by which teachers' low sense of efficacy regarding certain students can become a school pattern, an organizational norm: "There's nothing we can do; these kids can't learn." In such an environment, new teachers are pressured to accept the dominant culture of the school. Thus, for many teachers, maintaining order

becomes the ultimate goal (Cohen, 1972) inasmuch as motivating academic achievement is considered an impossible aim, given the students that they are assigned to teach.

Collegial relations. The isolation from colleagues and consequent loneliness characteristic of the teaching profession have been noted by a number of analysts (Jackson, 1968; Lortie, 1975). This aspect of teaching is probably a significant contributor to teacher dissatisfaction inasmuch as teachers are typically high in social needs (Holland, 1973; Super, 1970). The relationship of collegial relationships, however, to sense of efficacy is complex.

In our study, teachers at the modern middle school reported more negative colleague relationships than teachers at the junior high. However, negative colleague relationships do not appear to have a direct negative relationship with efficacy, since teachers' sense of efficacy as well as general job satisfaction was higher at the middle school. It is likely that the expression of negative feelings about some colleagues was a result of the increased contact with colleagues produced by team teaching. At the junior high, teachers rarely worked together and, consequently, had little conflict with other teachers. A number of studies have indicated that conflict among school staff may be indicative of a higher sense of professionalism and productive organizational activity than low levels of conflict (Brookover & Lezotte, 1977; Corwin, 1970).

Decision-making structures. One of the differences between the modern middle school and junior high that may relate to the difference observed in teacher efficacy was the greater involvement in school decision-making afforded the middle school teachers by the mechanism of a teacher advisory council comprised of representatives from the various teaching teams. However, this difference may also contribute to development of discordant colleague relations. The designation of team leader created a power differential among teachers that led to conflict. While our sample teachers often expressed the desire for greater participation in decisions, they were typically unable to be specific about the areas and means of involvement. Sarason (1971) and Goodlad (1975) suggest that teachers have become so accustomed to a subordinate role that assuming a greater role in decision-making is not easily accomplished. Teacher decision-making appears to be an important factor contributing to teachers' sense of efficacy, yet our understanding of effective methods of implementation is currently very limited.

Principal relations. The role of the principal in influencing teacher effectiveness has become a prominent issue as a result of the effective schools research (Cohen, 1981). In our middle school study, the principal appeared to set the style and direction of the school. The different role conceptions of teachers were directly related to the principal's conception of the teachers' role. While this may be due primarily to the administrator's initial selection bias in hiring teachers, further research into the process of principal influence on teachers' role perceptions seems warranted.

Another aspect of the principal's role that has implications for teachers' sense of efficacy is the principal's control over the scarce rewards and perquisites of teaching. The principal or his designate has some power to reduce teaching load, class size, provide equipment and material and other support services. The way the principal chooses to allocate resources is likely to have a significant effect on teachers' sense of efficacy. Teachers in our study frequently commented on the negative impact that inequities in the principal's distribution of scarce resources could have on their attitudes.

Exosystem

Nature of the school district. Our interviews with teachers took place during a very disruptive period in management-labor relations in the district. Teachers had expected a raise based on state legislative allocations, but the raise was denied them by administrative decisions at the district level. The impact of this action on teachers' sense of efficacy was evident. Many teachers were very vocal about their loss of motivation and their decision to reduce their efforts with students in the aftermath of the salary decision. Other studies have noted the impact of district-level decisions on the stress and effectiveness of teachers (Bidwell & Kasarda, 1975; Cichon & Koff, 1978; Cohen, Deal, Meyer, & Scott, 1976).

Macrosystem

A number of our basic cultural beliefs have important implications for teachers' sense of efficacy, among these are our conceptions of the nature of the learner and the role of the teacher. Another important influence is the cultural expectations regarding the role of education in society.

Conceptions of the learner. While teachers that we interviewed were able to identify and describe many of the factors that enable them to be effective motivators of students, perhaps the most powerful influence is the subtle and covert conception of the learner conveyed in U.S. cultural beliefs. As teachers talk about their students, it is evident that responsibility for success and failure is laid squarely on the student, as demonstrated in the distribution of teachers' responses to two questions that we posed asking them to what did they attribute their students' success and failure. Teachers overwhelmingly attributed both success and failure to student characteristics. In the minds of most teachers, students fail to achieve either because they are inherently unable or because they have willfully decided not to achieve. Either of these conclusions is likely to reduce teachers' efforts to motivate these students. According to Michael Lewis (1978), the tendency to blame poor students for their plight is deeply engrained in our culture. It is the mechanism by which those more fortunate economically are able to maintain their sense of self-worth. Lewis's thesis, applied to the context of the classroom, yields insight into the psychology of the teacher. By blaming students for their own failure either because of weaknesses of character, that is, laziness,

lack of motivation, apathy, or lack of innate ability, the teacher is freed from the heavy burden of being, in some sense, responsible for students' failure. Caught up in the self-protective strategy of "blaming the victim" to preserve their sense of professional self-worth (Ryan, 1976), teachers fail to recognize the self-protective strategies at work among many failing students. For the low achiever, effort becomes a "double-edged sword" because to try and fail provides incontrovertible evidence of their low ability (Covington & Omelich, 1981). As long as they do not try, they do not have to face the implications that low ability has for their fragile sense of self-worth.

More capable others refuse to work, because they anticipate the futility of their efforts; perceiving themselves doomed by race and/or poverty to a limited future, they refuse to be co-opted by a hostile system and attempt to rise above it by means of an open rebellion against the norms and expectations of the system (Metz, 1978). As pointed out by Metz, for many low achieving males high status in their peer group is negatively related to academic effort and classroom cooperation. Thus, students who choose to exert academic effort risk not only academic failure but loss of social status as well. Given the importance of social status among students, the choice of social status over academic success is not a difficult one for most (Bidwell, 1965).

As Bloom (1978) and Sarason (1971) have pointed out, psychology has lent support to the cultural beliefs that conceive of learning ability as a highly stable trait varying widely among individuals; and educational research, most notably through the Coleman Report (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966), has in recent years contributed to the societal expectation that home environment, not schooling, is the critical factor in determining achievement. Thus, when new teachers emerge from educational institutions determined to reach every student and meet with resistance, they have culture and social science to support their contention that they should not be held responsible. As Rist (1978) concluded in his book, The Invisible Children, the tragedy of this ready defense is it frees teachers, and the teacher education profession as well, from having to face the realization that they may not possess the knowledge and skills necessary for motivating some students. Without an admission of this inadequacy, no effort is made to discover more effective strategies, and thousands of teachers simply learn to live with a low sense of efficacy and accept complacently the fact of student failure.

In conclusion, our outline of the theoretical framework of teachers' sense of efficacy and the system of interrelationships impinging on it inevitably oversimplifies the complexity of the dynamics involved. Teacher's sense of efficacy provides a powerful focus for directing research and development efforts, because of the implications it has for student and teacher development; the complexity of the many variables involved cannot be overemphasized. Research designed to investigate the complex interactions and interdependencies among these variables is needed to begin to identify the more important contributors to teacher efficacy and effective means of increasing it. In the following section, recommendations for further research of teacher efficacy are suggested.

Recommendations for Future Research

From our interviews with teachers, we identified five major conditions that contribute to teachers' sense of inefficacy and their loss of a sense of professional self-worth:

(1) the lack of economic rewards--The failure to be compensated adequately for their work leads teachers to question their professional self-worth.

(2) role overload--The number of distinctive roles teachers are expected to assume in their school lives is overwhelming for many teachers. Integrating the roles of disciplinarian, instructor, evaluator, counselor, paper-pushing bureaucrat, and substitute parent among others becomes a burden many teachers are unable to negotiate successfully.

(3) a pervasive sense of uncertainty--From time to time, most teachers experience serious doubts about their effectiveness. In part, this is due to the lack of clarity teachers have as to their goals, and, in part, to lack of criteria that they feel are indicative of their effectiveness. Teachers generally distrust standardized achievement tests as measures of their effectiveness and tend to depend upon "fleeting behavioral cues from students to tell them how well they are doing their jobs" (Jackson, 1968, p. 120).

(4) isolation--The typical teaching situation places teachers in isolation from peers. The teachers we interviewed reported being demoralized and disillusioned, because the social support necessary for them to maintain their sense of efficacy was virtually non-existent. The norms against interference were so strong in some schools that teachers were discouraged from helping colleagues even when they knew that their colleagues needed assistance.

(5) sense of powerlessness--Teachers enter the profession with expectations that they will exercise responsibility and professional autonomy. Confronted with school and district regulations regarding curriculum and administrative procedures, many teachers are surprised and upset by the number of bureaucratic constraints restricting their professional autonomy.

In his description of an ecology of education, Bronfenbrenner (1976) advocated an approach to educational research that holds promise for producing significant changes in the teaching profession. Bronfenbrenner recommended the design of transforming experiments, that is, radical restructurings of educational practice intended to promote human development. In its role as the mediator of teacher behavior, teacher efficacy provides a powerful organizing basis for the design of transforming experiments capable of alleviating the

negative conditions threatening the survival of teaching as a profession. The goal of transforming educational experiments could be couched in terms of increasing teacher efficacy through methods and structures designed to improve the conditions of teaching.

Contexts for Increasing Teachers' Efficacy

In light of the nature of the negative conditions of teaching, four contexts are particularly relevant for transforming experiments designed to sustain and maintain the profession through the enhancement of teacher efficacy: teacher education, beginning teachers' socialization, school organizational structure, and parent-teacher relations. Some suggestions for the design of transforming experiments in each of these contexts will be presented in the following pages.

Teacher Education

Teachers have consistently reported that their teacher education programs have not prepared them adequately for the realities of the classroom (Lortie, 1975). To combat the threats to efficacy, especially the sense of uncertainty endemic to teaching, transforming experiments that focus on developing the analytical and evaluative skills of teachers seem especially relevant. Thus, transforming experiments designed to develop teachers' ability to identify their goals and to think analytically about the many factors affecting their sense of efficacy may increase teachers' ability to cope effectively with threats to their professional self-esteem. Greater support for teaching as a profession could be derived from such programas developed collaboratively as transforming experiments by teacher educators, educational researchers, and teachers.

From our analysis of teacher interviews, it is clear that teacher efficacy is highly dependent upon the specific teaching situation. Teachers may feel quite confident about their ability to motivate certain behaviors or some students while feeling less competent with others. Consequently, students in teacher education programs are in need of training that provides a wide range of experience in the many contexts they are likely to confront as teachers. Recognizing the multimethod, multiperson, multisituation, multivariable" (Smith, 1977) nature of teaching, Tikunoff and Ward (1978) recommended a "context-based" approach to teacher education in which a student teacher's performance would be analyzed in terms of the multiple contexts of teaching. A serious attempt to develop a context-based approach to teacher education would require a systematic analysis of the tasks and responsibilities of teaching, and the development of a hierarchy of skills, such that students would be gradually introduced into the role of teaching in terms of the difficulty level of the skills and contexts involved. The hierarchy of skills could form the basis for the goal-setting and self-evaluation with regard to efficacy that could serve as a defense against the threats to efficacy.

Teachers tend to be surprisingly unreflective about their work (Jackson, 1968; Lortie, 1975). Popular conceptions of teachers' thinking as a rational decision-making process (Shavelson & Stein, 1981) represent a goal to be achieved rather than an accurate depiction of the typical behavior of classroom teachers. Langer (1978) suggested that "most behavior may be enacted without paying attention to it, even complex social interaction" (p. 38). Teaching seems to be among the behaviors that are often conducted in a habitual rather than reflective manner. Jackson (1968) suggested that the demands of the classroom virtually require spontaneous, nondeliberative behavior from teachers. While Jackson is no doubt correct that spontaneity and ability to act decisively are essential during the interactive phase of teaching, teachers are not adequately trained in the reflective, self-analytical thinking necessary for effective planning.

A context-based program in which teachers are encouraged to analyze the specific aspects of their teaching performance in relation to the context in which it occurs would enable teachers to develop a more analytical approach to their teaching. Trained to engage in context-specific self-analysis, teachers would have a powerful technique for identifying the sources of their sense of inefficacy. Operating from an analytical perspective, teachers would be less likely to succumb to a sense of helplessness due to the inability to isolate the factors contributing to their feelings of inefficacy.

As part of the development of teachers' analytical thinking processes, techniques would be needed that enable teachers-in-training to evaluate their effectiveness. A major influence on teachers' sense of efficacy is the uncertainty most teachers feel about whether or not they are having an effect on student learning. Simple and specific procedures for self-evaluation of their effectiveness are needed. The contextual hierarchy of skills devised to organize the students' program would provide an outline of skills to be evaluated. Since our research suggests that teachers evaluate their effectiveness in relation to the effectiveness of other teachers, it would be important to provide teachers with frequent opportunities to observe and compare themselves with the performance of others, so that a realistic standard of comparison could be developed.

Thus, approaches to teacher education are needed that develop teachers' analytical and problem solving skills. Transforming experiments designed to identify such skills could become a valuable means of identifying effective teacher education practices.

Organizational Approaches to Increasing Teachers' Sense of Efficacy

The recommendations proposed for the transforming of teacher education experiments were focused on transforming the teacher. However, our analysis suggests that the major contributors to teachers' sense of inefficacy are organizational and structural. To focus exclusively on changing the teacher, leaving the structural organization of the school intact, is not likely to have an enduring effect on teachers' sense of efficacy. If structural supports are not devised to provide

teachers with the collegial, supervisory, community, and economic assistance required to resist the many challenges to sense of efficacy, efforts to change teachers' attitudes and behaviors toward their students are likely to have only transitory effects, at best.

Socialization of teachers into the profession. Perhaps the most powerful negative influence on new teachers' sense of efficacy is the informal process by which experienced teachers socialize new teachers into their professional role (Lortie, 1975). Hargreaves (1972) identified five teacher norms that exert pressure on new teachers to lower their expectations of themselves and their students: (1) autonomy, (2) loyalty to the staff group, (3) mediocrity, (4) cynicism, and (5) a degree of anti-intellectualism. In Hargreaves's study, new teachers who arrived early, obviously worked hard, and stayed late were subjected to teasing from the more experienced staff. New teachers quickly learned that public enthusiasm and effort violated the school norms for appropriate teacher behavior.

In light of the traumatic effect that the first weeks of teaching can have on teachers' sense of efficacy, the process of teacher socialization seems to be a particularly important area for research collaboration between teachers and teacher educators. Clearly, current informal processes of socialization tend to be detrimental to the enthusiasm and idealism of the new teacher.

Problem areas needing special attention in the design of effective socialization strategies include the following: (1) reducing the responsibilities of beginning teachers to enable them to assume teaching responsibilities gradually, avoiding the trauma and loss of efficacy due to the abrupt transition from student to full-time teacher, (2) fostering teachers' analysis of classroom experiences to enable them to maintain their motivation and enthusiasm and that of their students, (3) creating professional, collegial relations among new and experienced teachers that support rather than discourage their sense of efficacy, (4) designing evaluation strategies that bolster rather than threaten teachers' sense of efficacy, (5) sensitizing teachers to the social and cultural forces that affect the school, endangering their sense of efficacy.

Participative decision-making. From their study of teacher burnout, Farber and Miller (1981) concluded that teachers' dissatisfaction is often attributable to the school organizational factors that lead to a lack of a "psychological sense of community--a lack that produces feelings on the part of teachers of both isolation and inconsequentiality" (p. 238). In a focused ethnography of four relatively successful and two relatively unsuccessful schools, Little (1982) described a number of organizational characteristics conducive to the development of a sense of community and shared work. Norms of collegiality and experimentation prevailed in the successful schools, while the unsuccessful schools were more often characterized by isolation. Little concluded that continuous professional development is dependent on four critical practices:

(1) frequent, concrete, precise, coherent discussions about teaching practice (thus, building a shared language of teaching);

(2) mutual observation and critique;

(3) shared efforts to design and evaluate curriculum, and

(4) shared participation in the process of instructional improvement.

Similarly, our analysis of teacher attitudes toward their school organization suggests that the bureaucratic structure of most public educational institutions is a major factor in the alienation of teachers from their students. If teachers are to regain a sense of efficacy, efforts must be made to transform the impersonal bureaucratic school structure into a living community of committed individuals with a sense of mission with shared goals and shared responsibilities for decision-making. Collaborative efforts of schools of education, teacher organizations, and school districts could result in transforming experiments designed to introduce a sense of community within schools. John Dewey (1939) proposed such a model for sustaining teacher professionalism, but it has yet to be put to rigorous test in the urban school district. Dewey believed that his conception of human intelligence could be fostered in institutions that "allow all those affected by (the social institution) to have a share in producing and managing them" (p. 401).

While perhaps not feasible on a large-scale, small-scale transforming experiments are possible. Such experiments would provide teachers the autonomy and responsibility they expected when they first chose teaching as a profession and would provide them with the time and resources and expert support they need to maintain their sense of efficacy. Successful transforming experiments that increase teacher efficacy could provide the impetus for greater support and commitment to education.

Parent-teacher relations. A major source of teachers' inefficacy is their relations with the families of low-achieving students. As teachers engage in interactions with parents that have negative outcomes, they feel less effective as teachers, and their resulting low sense of efficacy reduces their willingness to risk further loss of efficacy in future interactions with parents. After such experiences, teachers are likely to decide to protect their remaining sense of efficacy from further assault by ceasing to initiate contact with parents; thus, the process of alienation is complete. A major research effort in the form of collaborative transforming experiments to facilitate home-school relationships would offer the potential for discovering a significant source of support for teachers' sense of efficacy.

Conclusion

Our cultural belief in the stability of human traits tempts us to conceive of teachers' sense of efficacy as a character trait that has potential for the screening and selection of candidates for teacher education and teaching positions (Trentham, Silvern & Brogdon, 1981). Our research suggests that such an expectation is unwarranted. Teachers' sense of efficacy is negotiated daily in their myriad transactions with students, parents, peers, and administrators. It is situation-specific, dependent on the individuals and interactions involved in each transaction. Thus, the teacher is ever vulnerable to self-doubt induced by the unpredictability and uncontrollability of human interaction. Given this uncertainty, teachers' sense of efficacy is in continual jeopardy, in danger of attack by resistant or hostile students, angry parents, demanding administrators and dissatisfied colleagues. Even the most self-assured teachers admit to periods of frustration and discouragement in response to certain classes or specific students or occasional "bad days." Thus, teachers' sense of efficacy is faced with continual challenge from multiple threats. Teachers who succumb to feelings of inefficacy are likely to suffer debilitating stress and be less effective with students. Yet with a supportive administrator, a change of circumstances, a different class, or a new perspective, such teachers may renew their enthusiasm and their effectiveness. Rather than focus on the identification of efficacy as a characteristic internal to the teacher, future research should explore the processes by which teacher education and socialization practices, organizational structures, instructional techniques, administrative strategies and home-school relations can reduce the threats and increase the support of teachers' sense of efficacy.

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